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Atty. Dkt. No. 029849-0205

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Vaillant and Juteau
Title: ANTIVIRAL
OLIGONUCLEOTIDES
TARGETING HSV

Appl. No.: 10/661,415

Filing Date: 09/12/2003

Examiner:

Art Unit: 1645

CERTIFICATE OF MAILING

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INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

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Commissioner for Patents
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Alexandria, VA 22313-1450

Sir:

The USPTO has waived the requirement under 37 CFR 1.98(a)(2)(i) to submit copies of U.S. patents and U.S. patent application publications when citing and submitting an Information Disclosure Statements in a patent application filed after June 30, 2003 and in an international application that has entered the national stage under 37 USC §371 after June 30, 2003. Accordingly, copies of these types of documents are not being supplied in connection with this application. Reference is being made to OG Notice dated August 5, 2003, *Information Disclosure Statements May Be Filed Without Copies of U.S. Patents and Published Applications in Patent Applications filed after June 30, 2003.*

Applicants submit herewith on Form PTO/SB/08 a listing of the documents cited by or submitted to the U.S. PTO in related application Serial No. 10/661,403 also filed 09/12/2003. As provided in 37 CFR §1.98(d), copies of the documents are not being provided since they were

previously submitted to the United States Patent & Trademark Office in that application and are on file with the USPTO.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

RELEVANCE OF EACH DOCUMENT

The relevance of the foreign-language document is explained in the related application.

Applicants respectfully request that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even

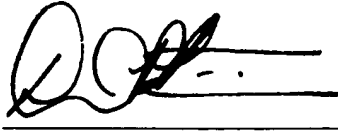
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Respectfully submitted,

Date November 23, 2004

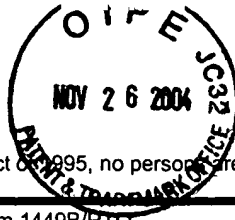
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By

A handwritten signature in black ink, appearing to read 'D. Lentini', is written over a horizontal line. The signature is stylized with a large 'D' and a cursive 'L'.

David P. Lentini
Attorney for Applicant
Registration No. 33,944

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Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2 of 13

Complete if Known

Application Number	10/661,415
Filing Date	09/12/2003
First Named Inventor	Andrew Vaillant
Group Art Unit	1645
Examiner Name	
Attorney Docket Number	029849-0205

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A5	BERKOW, <i>et al.</i> , "Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)," <i>The Merck Manual of Diagnosis and Therapy</i> , 15 th ed., 2499-2506 and 46-49 (1987)	
	A6	BLUME and CEVC, "Liposomes for the sustained drug release in vivo," <i>Biochimica et Biophysica Acta</i> 1029:91-97 (1990)	
	A7	BRUNTON, "Section VI Drugs Affecting Gastrointestinal Function," <i>The Pharmacological Basis of Therapeutics</i> 9(38):934-935 (1996)	
	A8	BUUR, <i>et al.</i> , "Penetration of 5-Fluorouracil and Prodrugs Across the Intestine of the Albino Rabbit: Evidence for Shift in Absorption Site from the Upper to the Lower Region of the Gastrointestinal Tract by Prodrugs," <i>Journ. of Controlled Release</i> 14:43-51 (1990)	
	A9	CAMPBELL and REIN, "In Vitro Assembly Properties of Human Immunodeficiency Virus Type 1 Gag Protein Lacking the p6 Domain," <i>Journ. of Virol.</i> 73:2270-2279 (1999)	
	A10	CEVC, <i>et al.</i> , "Ultraflexible vesicles, Transfersomes, have an extremely low pore penetration resistance and transport therapeutic amounts of insulin across the intact mammalian skin," <i>Biochimica et Biophysica Acta</i> 1368:201-215 (1998)	
	A11	CHENG, <i>et al.</i> , "Interactions Between Single-Stranded DNA Binding Protein and Oligonucleotide Analogs with Different Backbone Chemistries," <i>Journ. Mol. Recognition</i> 10:101-107 (1997)	
	A12	CONSTANTINIDES, <i>et al.</i> , "Formulation and Intestinal Absorption Enhancement Evaluation of Water-in-Oil Microemulsions Incorporating Medium-Chain Glycerides," <i>Pharmaceutical Res.</i> 11:1385-1390 (1994)	
	A13	CROOKE, <i>et al.</i> , "Pharmacokinetic Properties of Several Novel Oligonucleotide Analogs in mice," <i>Journ. Pharm. and Experim. Therap.</i> 277(2):923-937 (1996)	
	A14	CROOKE, S., "Progress in Antisense Technology: The End of the Beginning," <i>Meth. in Enzym.</i> 313:3-45 (1999)	

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			Group Art Unit	1645	
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	A15	Du PLESSIS, <i>et al.</i> , "Topical Delivery of Liposomally Encapsulated Gamma-Interferon," <i>Antivir. Res.</i> 18:259-265 (1992)		
	A16	EL-HARIRI, <i>et al.</i> , "The Mitigating Effects of Phosphatidylcholines on Bile Salt- and Lysophosphatidylcholine-induced Membrane Damage," <i>J. Pharm. Pharmacol.</i> 44:651-654 (1992)		
	A17	ENGLISCH and GAUSS, "Chemically Modified Oligonucleotides as Probes and Inhibitors," <i>Angewandte Chemie</i> 30(6):613-722 (1991)		
	A18	FENG, <i>et al.</i> , "Reversible Binding of Recombinant Human Immunodeficiency Virus Type 1 Gag Protein to Nucleic Acids in Virus-Like Particle Assembly In Vitro," <i>Journ. of Virol.</i> 76(22):11757-11762 (2002)		
	A19	FENNEWALD, <i>et al.</i> , "Inhibition of herpes simplex virus in culture by oligonucleotides composed entirely of deoxyguanosine and thymidine," <i>Antiviral Res.</i> 26:37-54 (1995)		
	A20	GABIZON, <i>et al.</i> , "Liposome formulations with prolonged circulation time in blood and enhanced uptake by tumors," <i>Proc. Natl. Acad. Sci. USA</i> 85:6949-6953 (1988)		
	A21	GOA, <i>et al.</i> , "Effect of Phosphorothioate Homo-oligodeoxynucleotides on Herpes Simplex Virus Type 2-induced DNA Polymerase," <i>Journ. of Biol. Chem.</i> 264(19):11521-11526 (1989)		
	A22	GAO, <i>et al.</i> , "Inhibition of Herpes Simplex Virus Type 2 Growth by Phosphorothioate Oligodeoxynucleotides," <i>Antimicrobial Agents and Chemotherapy</i> 34(5):808-812 (1990)		

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Sheet	4	of	13
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	A23	HIGUCHI, <i>et al.</i> , "Particle Phenomena and Course Dispersions," <i>Remington's Pharmaceutical Sciences</i> 21:301-329 (1985)	
	A24	HO, <i>et al.</i> , "Preparation of Microemulsions Using Polyglycerol Fatty Acid Esters as Surfactant for the Delivery of Protein Drugs," <i>Journ. of Pharm. Sci.</i> 85:138-143 (1996)	
	A25	HU, <i>et al.</i> , "Topical delivery of cyclosporine A from non-ionic liposomal systems: an <i>in vivo/in vitro</i> correlation study using hairless mouse skin," <i>S.T.P. Pharma Sciences</i> 4(6):466-469 (1994)	
	A26	ILLUM and DAVIS, "The organ uptake of intravenously administered colloidal particles can be altered using a non-ionic surfactant (Poloxamer 338)," <i>FEBS</i> 1212 167:79-82 (1984)	
	A27	INAGAWA, <i>et al.</i> , "Inhibition of human immunodeficiency virus type 1 replication by P-stereodefined oligo (nucleoside phosphorothioate)s in a long-term infection model," <i>FEBS Lett.</i> 528:48-52 (2002)	
	A28	JAIRATH, <i>et al.</i> , "Inhibition of respiratory syncytial virus replication by antisense oligodeoxyribonucleotides," <i>Antiviral Res.</i> 33:201-213 (1997)	
	A29	JARRETT, H., "Affinity chromatography with nucleic acid polymers," <i>J. Chromotography</i> 618:315-339 (1993)	
	A30	KABANOV, <i>et al.</i> , "A new class of antivirals: antisense oligonucleotides combined with a hydrophobic substituent effectively inhibit influenza virus reproduction and synthesis of virus-specific proteins in MDCK cells," <i>FEBS Lett.</i> 259:327-330 (1990)	

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	A31	KANDIMALLA, <i>et al.</i> , "Effects of Phosphorothioate Oligodeoxyribonucleotide and Oligoribonucleotides on Human Complement and Coagulation," <i>Bioorg. & Med. Chem. Lett.</i> 8:2103-2108 (1998)		
	A32	KEAN, <i>et al.</i> , "Inhibition of Herpes Simplex Virus Replication by Antisense Oligo-2'-O-methylribonucleoside Methylphosphonates," <i>Biochemistry</i> 34:14617-14620 (1995)		
	A33	KLIBANOV, <i>et al.</i> , "Amphipathic polyethyleneglycols effectively prolong the circulation time of liposomes," <i>FEBS Lett.</i> 268:235-237 (1990)		
	A34	KLIMUK, <i>et al.</i> , "Enhanced Anti-Inflammatory Activity of a Liposomal Intercellular Adhesion Molecule-1 Antisense Oligodeoxynucleotide in an Acute Model of Contact Hypersensitivity," <i>Journ. of Pharm. & Exper. Ther.</i> 292:480-488 (2000)		
	A35	KOOL, E., "Replacing the Nucleobases in DNA with Designer Molecules," <i>Acc. Chem. Res.</i> 35:936-943 (2002)		
	A36	LAVIGNE <i>et al.</i> , "Is antisense an appropriate nomenclature of design for oligodeoxynucleotides aimed at the inhibition of HIV-1 replication?" <i>AAPS PharmSci</i> , 4:1-11, 2002		
	A37	LEBEDEVA and STEIN, "Antisense Oligonucleotides: Promise and Reality," <i>Annu. Rev. Pharmacol. Toxicol.</i> 41:403-419 (2001)		
	A38	LEE, <i>et al.</i> , "Mucosal Penetration Enhancers For Facilitation of Peptide and Protein Drug Absorption," <i>Crit. Rev. in Ther. Drug Carrier Syst.</i> 8(2):91-192 (1991)		

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	A39	LERNER, <i>et al.</i> , "A Six-Month Trial of Valacyclovir in the Epstein-Barr Virus Subset of Chronic Fatigue Syndrome: Improvement in Left Ventricular Function," <i>Drugs of Today</i> 38(8): 549-561 (2002)	
	A40	LETSINGER, <i>et al.</i> , "Cholesteryl-conjugated oligonucleotides: Synthesis, properties, and activity as inhibitors of replication of human immunodeficiency virus in cell culture," <i>Proc. Natl. Acad. Sci. USA</i> 86:6553-6556 (1989)	
	A41	MANOHARAN, <i>et al.</i> , "Chemical Modifications to Improve Uptake and Bioavailability of Antisense Oligonucleotides," <i>Ann. N.Y. Acad. Sci.</i> 660:306-309 (1992)	
	A42	MANOHARAN, <i>et al.</i> , "Introduction of a Lipophilic Thioether Tether in the Minor Groove of Nucleic Acids for Antisense Applications," <i>Bioorg. & Med. Chem. Letters</i> 3:2765-2770 (1993)	
	A43	MANOHARAN, <i>et al.</i> , "Cholic Acid-Oligonucleotide Conjugates for Antisense Applications," <i>Bioorg. & Med. Chem. Lett.</i> 4:1053-1060 (1994)	
	A44	MANOHARAN, <i>et al.</i> , "Oligonucleotide Conjugates: Alteration of the Pharmacokinetic Properties of Antisense Agents," <i>Nucleosides & Nucleotides</i> 14(3-5):969-973 (1995)	
	A45	MANOHARAN, <i>et al.</i> , "Lipidic Nucleic Acids," <i>Tetrahedron Lett.</i> 36:3651-3654 (1995)	
	A46	MARHSALL, <i>et al.</i> , "Inhibition of human immunodeficiency virus activity by phosphorodithioate oligodeoxycytidine," <i>Proc. Natl. Acad. Sci. USA</i> 89:6265-6269 (1992)	

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	A47	MARSHALL and CARUTHERS, "Phosphorodithioate DNA as a Potential Therapeutic Drug," <i>Science</i> 259:1564-1570 (1993)	
	A48	MATSUKURA et al., "Antisense phosphorothioates as antivirals against human immunodeficiency virus (HIV) and hepatitis B virus (HBV)." <i>Toxicology Letters</i> , 82/83: 435-538, 1995.	
	A49	MATSUKURA, et al., "Phosphorothioate Analogs of Oligodeoxynucleotides: Inhibitors of Replication and Cytopathic Effects of Human Immunodeficiency Virus," <i>Proc. Natl. Acad. of Sciences of USA</i> 84:7706-7710 (1987)	
	A50	MISHRA, et al., "Improved leishmanicidal effect of phosphorothioate antisense oligonucleotides by LDL-mediated delivery," <i>Biochimica et Biophysica Acta</i> 1264:229-237 (1995)	
	A51	MIYANO-KUROSAKI et al., "Inhibition of HTLV-I induction and virus-induced syncytia formation by oligodeoxynucleotides." <i>Virus Genes</i> , 12:205-217, 1996.	
	A52	MIYAO, et al., "Stability and Pharmacokinetic Characteristics of Oligonucleotides Modified at Terminal Linkages in Mice," <i>Antisense Res. & Dev.</i> 5:115-121 (1995)	
	A53	MONTEITH, et al., "Preclinical Evaluation of the Effects of a Novel Antisense Compound Targeting C-raf Kinase in Mice and Monkeys," <i>Toxicolog. Sciences</i> 46:365-375 (1998)	
	A54	MORRIS, et al., "High Affinity Ligands from <i>in vitro</i> Selection: Complex Targets," <i>Proc. Natl. Acad. Sci. USA</i> 95:2902-2907 (1998)	

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	A55	MURANISHI, S., "Absorption Enhancers," <i>Crit. Rev. in Ther. Drug Carr. Syst.</i> 7:1-33 (1990)	
	A56	NANDI, <i>et al.</i> , "DNA-induced Partial Unfolding of Prion Protein Leads to its Polymerisation to Amyloid," <i>J. Mol. Biol.</i> 322:153-161 (2002)	
	A57	NEURATH, <i>et al.</i> , "Anti-HIV-1 activity of anionic polymers: a comparative study of candidate microbicides," <i>BMC Infectious Diseases</i> 2:1-11 (2002)	
	A58	OBERHAUSER and WAGNER, "Effective incorporation of 2'-O-methyl-oligoribonucleotides into liposomes and enhanced cell association through modification with thiocholesterol," <i>Nucleic Acids Res.</i> 20(3):533-538 (1992)	
	A59	OLIVIERI, <i>et al.</i> , "Hepatitis C Virus and Arthritis," <i>Rheumatic Diseases Clinics of North America</i> 29:1-18 (2003)	
	A60	ORUM and WENGEL, "Locked nucleic acids: A promising molecular family for gene-function analysis and antisense drug development," <i>Curr. Op. in Molecular Ther.</i> 3:239-243 (2001)	
	A61	PAN <i>et al.</i> , "Isolation of virus-neutralizing RNAs from a large pool of random sequences." <i>Proc. Nat. Acad. Sci. USA</i> , 92:11509-11513, 195.	
	A62	PAPAHADJOPOULOS, <i>et al.</i> , "Targeting of Liposomes to Tumor Cells <i>in Vivo</i> ," <i>Ann. N.Y. Acad. Sci.</i> pp. 64-74 (1987)	

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				Application Number	10/661,415
				Filing Date	09/12/2003
				First Named Inventor	Andrew Vaillant
				Group Art Unit	1645
Examiner Name					
Sheet	9	of	13	Attorney Docket Number	029849-0205

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	A63	PEYMAN, <i>et al.</i> , "Inhibition of Viral Growth by Antisense Oligonucleotides Directed against the IE110 and the UL30 mRNA of Herpes Simplex Virus Type-1," <i>Biol. Chem. Hoppe-Seyler</i> 376:195-198 (1995)		
	A64	QI, <i>et al.</i> , "Study on the Inhibitory effect of antisense phosphorothioate oligodeoxynucleotide on coxsackie virus B ₃ replication <i>in vitro</i> ," <i>Chinese J Exp. Clin. Virol.</i> 14:253-256 (2000)		
	A65	RITSCHER, W., "Standards of Clinical Investigations in the USA," <i>Meth. Find Exp. Clin. Pharmacol.</i> 15(4):207-215 (1993)		
	A66	SAISON-BEHMOARAS, <i>et al.</i> , "Short modified antisense oligonucleotides directed against Ha-ras point mutation induce selective cleavage of the mRNA and inhibit T24 cells proliferation," <i>The EMBO Journal</i> 10:1111-1118 (1991)		
	A67	SANGHVI, Y., "Heterocyclic Base Modifications in Nucleic Acids and Their Applications in Antisense Oligonucleotides," <i>Antisense Research and Applications</i> Ch. 15:273-288 (1993)		
	A68	SCHOTT, H., "Colloidal Dispersions," <i>Remington's Pharmaceutical Sciences</i> Ch. 20:271-300 (1985)		
	A69	SHEA, <i>et al.</i> , "Synthesis, hybridization properties and antiviral activity of lipid-oligodeoxynucleotide conjugates," <i>Nucleic Acids Res.</i> 18:3777-3783 (1990)		
	A70	STAHL, <i>et al.</i> , "High Incidence of Parvovirus B19 DNA in Synovial Tissue of Patients with Undifferentiated Mono- and Oligoarthritis," <i>Clin. Rheumatol.</i> 19:281-286 (2000)		

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				Andrew Vaillant	
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	A71	STEIN and CHENG, "Antisense Oligonucleotides as Therapeutic Agents-Is the Bullet Really Magical?" <i>Science</i> 261:1004-1012 (1993)	
	A72	STEIN, <i>et al.</i> , "Phosphorothioate Oligodeoxynucleotides Are Potent Sequence Nonspecific Inhibitors of <i>De Novo</i> Infection by HIV," <i>AIDS Res. & Human Retroviruses</i> 5:639-646 (1989)	
	A73	STEIN, C.A., "The experimental use of antisense oligonucleotides: a guide for the perplexed," <i>J. Clin. Invest.</i> 108:641-644 (2001)	
	A74	SUNAMOTO, <i>et al.</i> , "Liposome Membranes. V. Interaction of Zinc(II) Ion with Egg Phosphatidylcholine Liposomes," <i>Bull. Chem. Soc. Jpn.</i> 53:2778-2781 (1980)	
	A75	SWINYARD, <i>Remington's Pharmaceutical Sciences</i> 18th Ed., Ch. 39:782-783 (1990)	
	A76	SVINARCHUK, <i>et al.</i> , "Inhibition of HIV proliferation in MT-4 cells by antisense oligonucleotide conjugated to lipophilic groups," <i>Biochimie</i> 75:49-54 (1993)	
	A77	TAKAHASHI and YAMADA, "Viral Etiology for Parkinson's Disease - A Possible Role of Influenza A Virus Infection," <i>Jpn J Infect Dis.</i> 52:89-98 (1999)	
	A78	TAKAHASHI, <i>et al.</i> , "The Use of Perfluorochemical Emulsion as a Vascular Perfusate in Drug Absorption," <i>J. Pharm. Pharmacol</i> 40:252-257 (1988)	

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	A79	TAKAKURA, <i>et al.</i> , "Uptake Characteristics of Oligonucleotides in the Isolated Rat Liver Perfusion System," <i>Antisense & Nucleic Acid Drug Developmt.</i> 6:177-183 (1996)		
	A80	TAKESHITA, <i>et al.</i> , "Oligodeoxynucleotides Containing Synthetic Abasic Sites," <i>Journ. of Biol. Chem.</i> 262:10171-10179 (1987)		
	A81	TALBOT, <i>et al.</i> , "Virus-Induced Autoimmune Reactions in the CNS," <i>Curr Top Microbiol Immunol</i> 253:247-271 (2001)		
	A82	KROSCSWITZ, J. I., <i>The Concise Encyclopedia Of Polymer Science And Engineering</i> , pp. 858-864 (1990)		
	A83	<i>The Merck Manual of Diagnosis and Therapy</i> 15:1206-1228 (1987)		
	A84	TONKINSON, <i>et al.</i> , "Cellular Pharmacology and Protein Binding of Phosphoromonothioate and Phosphorodithioate Oligodeoxynucleotides: A Comparative Study," <i>Antisense Res. & Developmt.</i> 4:269-278 (1994)		
	A85	VIVES, <i>et al.</i> , "Lipophilic pro-oligonucleotides are rapidly and efficiently internalized in HeLa cells," <i>Nucleic Acids Res.</i> 27:4071-4076 (1999)		
	A86	WALTER, <i>et al.</i> , "Viral induction of a chronic asthma phenotype and genetic segregation from the acute response," <i>Journ. of Clin. Invest.</i> 110:165-286 (2002)		

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	A87	WANG and HUANG, "Plasmid DNA Adsorbed to pH-Sensitive Liposomes Efficiently Transforms the Target Cells," <i>Bioch. & Biophys. Res. Comm.</i> 147(3):980-985 (1987)		
	A88	WEINER, <i>et al.</i> , "Liposomes: A Novel Topical Delivery System for Pharmaceutical and Cosmetic Applications," <i>Journ. of Drug Targeting</i> 2:405-410 (1994)		
	A89	WU, <i>et al.</i> , "Increased Microvascular Permeability Contributes to Preferential Accumulation of Stealth Liposomes in Tumor Tissue," <i>Cancer Research</i> 53:3765-3770 (1993)		
	A90	YAMAMOTO, <i>et al.</i> , "A Mechanistic Study on Enhancement of Rectal Permeability to Insulin in the Albino Rabbit," <i>Journ. of Pharm. and Exp. Ther.</i> 263:25-31 (1992)		
	A91	YAMASHITA, <i>et al.</i> , "Effects of diclofenac sodium and disodium ethylenediaminetetraacetate on electrical parameters of the mucosal membrane and their relation to the permeability enhancing effects in the rat jejunum," <i>J. Pharm. Pharmacol.</i> 39:621-626 (1987)		
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	A93	YU, <i>et al.</i> , "Stereo-Enriched Phosphorothioate Oligodeoxynucleotides: Synthesis, Biophysical and Biological Properties," <i>Biorg. & Medicinal Chem.</i> 8:275-284 (2000)		
	A94	ZAMECNIK, <i>et al.</i> , "Inhibition of replication and expression of human T-cell lymphotropic virus type III in cultured cells by exogenous synthetic oligonucleotides complementary to viral RNA," <i>Proc. Natl. Acad. Sci. USA</i> 83:4143-4146 (1986)		

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	A95	ZHOU and HUANG, "Targeted delivery of DNA by liposomes and polymers," <i>Journ. of Controlled Release</i> 19:269-274 (1992)	
	A96	International Search Report from PCT Application No. PCT/IB03/04573 dated Feb. 18, 2004.	

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